Read each question carefully and select the best answer choice. Mark only on your own paper or the bubble sheet. You are required to show all of your work for starred (\*\*) problems.

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| --- | --- | --- | --- |
| \*\*1) |  | If $6500 is invested in a long-term trust fund with an interest rate of 9% compounded continuously, what is the amount of money in the account after 15 years? |  |
|  | a. | $27,434.52 |  |
|  | b. | $23,676.14 |  |
|  | c. | $25,073.27 |  |
|  | d. | $48,028.86 |  |

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| 2) |  | The time required to grow a certain bacteria in a culture beginning with 10 bacteria is where is the number of bacteria and is the time in hours. How much time is required to grow a culture of 4100 bacteria? |
|  | a. | 4.0 hours |
|  | b. | 14.7 hours |
|  | c. | 6.0 hours |
|  | d. | 20.6 hours |
| \*\*3) |  | Evaluate the logarithm using the change-of-base formula. |
|  | a. | 2.868 |
|  | b. | 56.724 |
|  | c. | 0.700 |
|  | d. | 1.638 |

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| 4) |  | Evaluate the logarithm using the change-of-base formula. |
|  | a. | 4 |
|  | b. | 16*e* |
|  | c. | 16 |
|  | d. |  |

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| 5) |  | Evaluate the logarithm using the change-of-base formula. |
|  | a. | 2 |
|  | b. | 3 |
|  | c. |  |
|  | d. |  |

|  |  |  |
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| 6) |  | Use the properties of logarithms to expand the expression. (Assume all values are positive.) |
|  | a. |  |
|  | b. |  |
|  | c. |  |
|  | d. |  |
| 7) |  |  |
|  | a. |  |
|  | b. |  |
|  | c. |  |
|  | d. | None of these |

|  |  |  |
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| \*\*8) |  | Solve for x: |
|  | a. |  |
|  | b. |  |
|  | c. |  |
|  | d. |  |

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| \*\*9) |  | Solve fore x: |
|  | a. |  |
|  | b. |  |
|  | c. |  |
|  | d. | None of these |
|  |  |  |
| \*\*10) |  | Solve for x: |
|  | a. | -1 |
|  | b. | -27 |
|  | c. | 27 |
|  | d. | 27, -1 |